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EFFECT OF INTERACTIVE MULTIMEDIA LEARNING TO LEARN SKILLS OF STUDENTS SPORTS VOLLEYBALL

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Abstract

Introduction. Mastery of basic technical skills of volleyball is the basis of learning theory and practice volleyball at sports students. The rapid development of instructional media, both software, and hardware which will surely bring a shift in the role of educators as a messenger, than that used to principle-centered learning educators to student-centered learning. Likewise, the tendency of increasing student technology literacy. What was once a student-centered learning please educators, students now want them given the widest possible opportunity for independent study with a variety of media sources and learning?
The objective of the work. This study aims to determine whether the basic technical skills learning model based interactive multimedia volleyball effectively improve the basic techniques of volleyball skill sports student.
Research methods. Quantitative research with Quasi-Experiment. The design was pretest-posttest non-equivalent control group design. Subjects in the study were students of sports
Research result, Based on data analysis of N-Gain score through independent test sample t-test is known sig (2-tailed) was 0.000 <0.05

Conclusions. There was a significant difference in the effectiveness of the (real) between the usage-based model of learning volleyball interactive multimedia with conventional learning models to improve learning outcomes of basic technical skills students volleyball sport.

Key words: Learning Volleyball, Interactive Multimedia

Introduction

The rapid development of instructional media, both software, and hardware which will surely bring a shift in the role of educators as a messenger, than that used to principle-centered learning educators (CLE) to student-centered learning (SCL). Likewise, the tendency of increasing student technology literacy. What was once a student-centered learning please educators, students now want them given the widest possible opportunity for independent study with a variety of media sources and learning? Educators no longer serve as the sole source of learning in the learning activities (Voulodimos, Doulamis, Doulamis, & Protopapadakis, 2018). Need to be analyzed on the future of learning tendencies that have changed the conventional learning towards the learning industry era 4.0.

Learning is a change in the mechanisms and behaviors that last a long time, or the capacity to behave in a certain way, resulting from exercise or other forms of experience (Dale H. Schunk, 2012) (Domjan M, 1998). Learning is the process by which people acquire new capacity to perform a skill, inferred from observations of performance (Edwards, 2011). Learning can be interpreted as a process of interaction of individuals with the situation around him or seen as a process towards a goal through a variety of experiences that can last long. Learning is essentially a process of interaction between teachers and students, either direct interaction such as activity-face or indirectly, using a variety of media (Rusman, 2015). Learning or learning is a relatively permanent change in the probability to show certain behaviors that are caused by some previous experience (successful or unsuccessful) or a relatively permanent change in the potential of an organism to respond to that resulting from experience or previous practice (Robert, 2014).

Media in learning is defined as a tool that can be used as a messenger to achieve the learning objectives. Interactive multimedia itself is a multimedia equipped with a controller that can be operated by the user (Wati, 2016). Multimedia is a combination of two or more media integration and complex technology relies on computer equipment (Gao, 2015). Multimedia as a means to convey the purpose, either for learning or not. Elements of the information referred to in between text, graphics, images, photographs, animations, audio, and video. Multimedia as a combination of text, art, sound, animation, and video delivered to end-users by computer or electronic device or other digital media. Multimedia can be described as an electronic means to present information to an audience (Essel, Osei-Poku, Tachie-Menson, and Opoku-Asare, 2016).

With interactive multimedia-based learning process, students are expected to more

quickly understand the basic technical knowledge and skills of volleyball to be achieved. Multimedia learning cognitive theory argues that the brain processes audio and visual information in different ways (Vilardi, 2013). If a particular concept can be illustrated through the use of multimedia tools, a student will have the potential to gain a better understanding than through the use of the media (NA Vernadakis, Zetou, and Andrew, 2006) (N. Vernadakis, Avgerinos, Zetou, & Giannousi, 2006).

The tendency of the future of learning has changed the conventional learning approaches. Sport in which a student can learn anywhere, anytime, with anyone, and through anything, it means that students can learn the sport through the internet, smartphones, CD-ROM via a laptop, radio, television, laboratory and direct experience in the field (Yot-Domínguez & Marcelo, 2017) (Ifinedo, 2013).

Technology has changed the way we work, communicate, and learn (Essel et al., 2016). Network education technology applied in teaching exercise is an important symbol of modern sports teaching, the advantages of the application of multimedia technology and improving the quality of teaching physical education, teaching management optimization has become the development direction of modernization of teaching physical education (Gao, 2015). More Yuan Zhou stated that the modern educational technology, computer application in physical education colleges and universities, sports training, competition, and management play an indispensable role (Zhao and Guo, 2015).

Learning multimedia message waged knowledge, skills, and attitudes to learners. Skills to enable them develop properly and adequately in a global society, where knowledge of multicultural and use of new technologies that better enable them to be at the forefront in the process of learning new knowledge (Shebl Rezk Fayza, 2017). Multimedia technology as advanced technologies in audio-visual education programs more widely applied, along with the start of the development and the development of science and technology, such as in physical education in college (Dina Metwaly, 2016).

The proposed multimedia learning environment combining images, sound, text, and graphics are supported electronically with direct practice, provides an opportunity for teaching, collaboration, feedback, and creative interaction between the media and the user personally (Dina Metwaly, 2016). Multimedia learning can be motivating thoughts, feelings, concerns, and willingness to learn learners thereby deliberately learning occurs, composed, aim and control. If a particular concept can be illustrated through the use of multimedia tools, a learner will have the potential to gain a better understanding than through the use of the media (Vilardi, 2013).

Multimedia has the interactive capability to be one good alternative to assist in the process of learning the basic techniques of volleyball. Development of multimedia learning model is assumed to be very helpful because of an underlying three things; Humans process visual and auditory information through different channels, processing of information in working memory is limited to the limited amount of information at one time, and students should be involved in the process of active information (Skuballa, Dammert, & Renkl, 2018). As one part of the components of the learning system, multimedia use and choice of learning the basic techniques of volleyball should consider the characteristics of the other components. consisting of, goals, strategies, materials, and evaluation of learning.

Multimedia learning the basic techniques of volleyball on a computer or smartphone and display interactive video as a tool for educators in deliver learning materials to learners (Kabassi et al., 2016). Computer or smartphone is a controller of a combination of several media in learning multimedia course will hone the ability of learners to receive learning materials volleyball. Multimedia is used because it has a variety of benefits that can help

overcome the difficulties of learners. Multimedia is used to overcome the obstacles in the learning process (Mashud, James Tangkudung, 2018).

There are two principles that learning using multimedia volleyball better than conventional learning, these principles are: (1) we can take advantage of the limited working memory capacity is more effective because of the words and the images are processed by different memory structure; and (2) there is an opportunity to connect the verbal representations and images produced by the verbal and pictorial information, which can encourage deeper thinking about the material and thus encourage more effective learning (Czaja & Sharit, 2016). In the industrial era 4.0 today, utilizing smartphones and tablets in learning in the field of education both at school and in college has increased because can learn anytime and where I independently (Ifinedo, 2013) (Yot-Domínguez & Marcelo, 2017) (Anglin & Ley, 2002) (Koole, 2009).

Volleyball is part of the game that is included in the curriculum of physical education and sport. Unlike the other games, a special way to make contact with the different balls, a limited number of touches, the size of a small field where the game is played, the system of rotation, speed and duration of each game (Nikolov, 2015). Volleyball consists of serve, reception of the serve, set, attack, block, and defense (García-Hermoso, Dávila-Romero, and Saavedra, 2013).

Class volleyball practice using interactive multimedia-based learning method possible direct and indirect/assignment. Learning with the help of interactive multimedia, providing convenience to students in learning and practicing basic techniques of volleyball of the most simple movement to the movement complex. Presented by Mike, that learning motorik in this case the movement skills to go through the exercise was repeated and takes a long time, from something simple to the complex and from part to whole movement to (Hebert, 2013). Techniques in volleyball games are played the ball efficiently and effectively in accordance with the applicable rules of the game in order to achieve an optimal result. In the mastery of basic technical skills of volleyball, it is very important students understand the posture and position of the body in accordance with the needs for efficiency of movement, where learners must understand when to use body position low, medium and high (Barbara L. Viera, Ferguson, 1996). Antonio says volleyball is composed of serve, reception of the serve, set, attack, block, and defense (García-Hermoso et al., 2013).

Some previous studies have associated with volleyball and multimedia, with a variety of research results. The experimental group with video footage has increased the basic techniques of volleyball quickly and with less time than in the control group (Raiola, Parisi, Giugno, & Di Tore, 2013). The experimental group with a female student using Facebook increased the basic techniques of volleyball skills significantly higher than the control group (traditional teaching), (Rezk, 2017). Studies using visual adolescent who experience abnormal light category with the results of the basic techniques of volleyball skills experimental group was better than the control group (Shebi Rezk Fayza, 2017). A group of middle school students learning mix (multimedia computer with a traditional) most effectively develop the basic techniques of volleyball skills compared with traditional learning and multimedia learning computer (NA Vernadakis, Zetou, et al., 2006) (NA Vernadakis, Andreas, & Zetou, 2006). A significant difference in the increase in service and passing learning computer multimedia, traditional teaching and mix (Sethu, 2014).

Based on the results of the study along with theoretical concepts described above about learning theory, volleyball games, and interactive multimedia. It could be concluded that teaching and learning is a process lasting behavioral changes that get the result of the stimulation and interaction of individuals with the situation around him or seen as a process

towards a goal through exercise or practice and experiences. Volleyball games a game that played by six people with a relly points system which consists of the basic techniques of passing, serve, spike/smash and block. While the basic technical skills of volleyball was played a ball with the ability to efficiently and effectively by applicable regulations with regard posture (initial posture, movement, and attitude core end) and the position of the body by the needs for the efficiency of movement. The interactive multimedia is the integration of various media such as video, audio, images, text, and graphics that are controlled by the user (interaction) using a computer program or a smartphone.

The purpose of learning volleyball is not reached to the maximum wage increase in the acquisition of skills of students due to a general lack of innovation and improvement in the implementation of learning skills, so this research is expected to provide a solution by observing in detail the progress of the development of the provision of independent tasks, usage-based interactive multimedia smartphone in supporting learning and teaching experience in the field directly integrated in the subjects of the sport of volleyball.

Objective of the study

To determine whether learning the basic techniques of volleyball skills-based interactive multimedia effectively improve the basic techniques of volleyball skill sports student.

Research methods

The method used was Quasi-Experimental Design, which designs some groups are not fully functioning control to affect the performance of an experiment. This study design is the nonequivalent control group design.

At this stage the effectiveness test using respondents eighty (80) students consisting of forty (40) subjects into the experimental group and forty (40) subject to a control group in the study program of health physical education and recreation tadulako university (Cluster Sampling technique). These operational trials carried out during one semester runs, starting with the pre-test and post-test ends with. An experimental group is a group that uses interactive multimedia learning while the control group still uses the old learning.

Furthermore, to prove the significance of differences in the effectiveness of the learning model based interactive multimedia with conventional learning model then needs to be tested statistically to go through several stages of analysis is data normality test, test N-Gain score as well as independent test sample t-test N-Gain score or t-test correlated (related).

Results

Based on the output pair 1 obtained sig (2-tailed) 0.000 <0.05, it can be concluded that there are differences in average test basic technical skills for the student volleyball pre-test post-test experimental class (volleyball-based learning model interactive multimedia). Based on the output pair 2 obtained sig ((2-tailed) 0.000 <0.05, it can be concluded that there are differences in average test students' skills to pre-test post-test control group with the control class (conventional learning models). Based on the discussion output pair 1 can be concluded that there is a learning model influence the basic techniques of volleyball interactive multimedia based on learning outcomes of students' skills in the subject of the theory and practice volleyball.

Based on the output table Group statistics, know the value of Mean N-Gain percent for the experimental class is equal to 81.5712 or 81.6%. Based on the interpretation of the effectiveness category table N-Gain value (%), it can be concluded that the use of the learning model based interactive multimedia volleyball effectively to improve learning outcomes of basic technical skills in the student volleyball sport. Hereinafter known Mean value N-Gain percent for the control class is equal to 42.5850 or 42.6%, so the interpretation category table

based on the effectiveness of N-Gain value (%), it can be concluded that the use of conventional learning model (the control group) was less effective to improve learning outcomes of basic technical skills students volleyball sport.

Based on the above conclusions, it is descriptive can be said that there are differences in the effectiveness of the learning model based interactive multimedia volleyball with conventional learning models in improving learning outcomes basic technical skills students volleyball sport. To determine whether the differences in the effectiveness of both the learning model is meaningful (significant) or not to interpret the output table independent sample t-test.

a) Based on independent test output table test known sig on Levene's test for equality of variances is equal to 0.356> 0.05 it can be concluded that the data variance N-Gain (%) for data experimental class and control class is the same or homogeneous. Thus, independent t-test for N-Gain score is based on the values contained in the table sig equal variances assumed.
b) Based on the output table independent the test sample, known sig (2-tailed) was 0.000 <0.05 thus it can be concluded that there is a significant difference in the effectiveness of the (real) between the usage-based model of learning volleyball interactive multimedia with conventional learning model to improve learning outcomes of basic technical skills students volleyball sport.

Discussion

Conditions literature of research results relating to the learning model based multimedia volleyball still limited. The results of studies showing the effectiveness volleyball learning model based interactive multimedia still significant but this study is limited to a few universities in eastern Indonesia.

Conclusions

The learning model based interactive multimedia volleyball effectively improve learning outcomes of the basic techniques of volleyball skill sports student.

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